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ABSTRACT

A study was conducted to explore the relationship of the pronunciation of /r/ to social class and age in the speech of whites in Tuscaloosa, Alabama. Tape-recorded interviews were conducted with a sample of informants representing a cross-section of ages and social classes in the city. Conversation was elicited on a number of topics of common interest to assure the informality of the speech samples collected. Education, occupation and income were considered in determining social rank. Three age groups were formed, using 22 and 61 as the upper limits for the young and middle groups. The youngest informant was 8, and the oldest 86. The following were among the results of the analyses: (1) stratification of /r/ is exhibited both by class and by age; (2) if /r/ following a stressed mid-central vowel, /r/ following a low-mid back vowel and /r/ in unaccented syllables are analyzed separately, each shows stratification by class and age, except the low-mid back vowel in the 23+ age group; (3) even though all age groups of lower class informants have more full /r/ constriction than any other social classes, all are seen to be moving toward full /r/ constriction as their norm, as can be seen in the large percentage of full /r/ constriction exhibited by the 22- informants in all social classes. (KM)

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The Death of a Prestige Form, Or The Social Stratification of R in Tuscaloosa, Alabama

L. Ben Crane

In 1966, William L. Labov published the Social Stratification of English in New York City, in which he shows that when an "... individual speech pattern is studied in the larger context of the speech community, it is seen as an element in a highly systematic structure of social and stylistic stratification." While the significance of this statement with its implications for further study is virtually indisputable, surprisingly few studies dealing with stratification of speech sounds within a community have followed Labov's work.

The purpose of this study is to explore the relationship of the pronunciation of R to social class and an age in the speech of whites in Tuscaloosa, Alabama. The speech of blacks is not included because a separate study is required to do justice to black dialect. Also, much work already has been done with black speech while very little has been attempted with white southern speech.

Certain terms used in this study need to be defined.

Phonological variation of R is said to occur in Tuscaloosa since more than one pronunciation of R consistently appears in the city.

The terms social class and social stratification generate much discussion and disagreement among sociologists

The method of dealing with social class and stratification in this study is based on the concepts of Bernard Barber. He views social stratification as unequal categories of people defined in terms of ordered or measured referents. In this study, people are assigned to groups or classes according to their "social rank." The social rank of an individual is defined for this study as the sum of his ratings on scales for education, income, and occupation. Therefore, a social class is a group of individuals sharing similar social ranks. Clearly then, social class in the present study is a category, with Barber's

"measurable referents" being education, income, and occupation

Social stratification is viewed in this study as a system of layers or strata of society. These strata are categorical classes which are made up of people sharing similar social ranks. Social stratification, then, is defined strictly in terms of these categorical classes; the strata (classes) have a built-in ordering in that each stratum represents a range of values on a linear scale. This ordering of strata, from the lowest valued stratum to the highest, is basic to the present study, and the use of the term stratification will be said to occur only if the linguistic values of R exhibit the same direction of ordering as the social classes or age groups within social classes.

Particular pronunciations of R are associated with particular social classes and age groups in social classes; however, the appearance of a particular pronunciation alone in the speech of an individual is not sufficient evidence to determine his social class. Conversely, the fact that an individual is a member of a given social class does not necessarily mean that he will have a particular pronunciation of R in his speech; yet, there is the likelihood of the appearance of a particular pronunciation in the speech of a member of a given social class.

Another distinction of terms that needs to be made is the difference between apparent time and real time. A consideration of age stratification in apparent time deals with distinct age groups at a fixed point in time, while studying age stratification in real time consists of dealing with a fixed group of informants at several distinct points in time. All of the figures and tables regarding age stratification in the present study deal with apparent time.

A total of 56 informants were interviewed for this study, and this interview was recorded on a standard reel-to-reel tape recorder. Since Tuscaloosa's population is relatively stable and largely native born, the decision was made to interview only natives of Tuscaloosa and its surrounding metropolitan area.

In most cases the informants were at least third generation Tuscaloosa residents. In certain areas of the country, no doubt this would ignore a large segment of the current population, but this "natives only" requirement for Tuscaloosa seems to insure a more accurate picture of the speech than any attempt to include non-native speakers.

Since the size of the sample necessarily had to be restricted, a purposive sampling procedure was employed to insure a complete cross-section of age and social status of white informants from Tuscaloosa. Purposive sampling is discussed by Claire Sellitz on page 527 in Research Methods in Social Relations. She says:

> The basic assumption behind purposive sampling is that with good judgment and an appropriate strategy one can handpick the cases to be included in the sample and thus develop samples that are satisfactory in relation to one's needs. A common strategy of purposive sampling is to pick cases that are judged to be typical of the population in which one is interested.

I carefully attempted to avoid any bias in selection that could have skewed the results. Informants were selected to represent various religious backgrounds, neighborhoods within the city, and occupations.

At the outset, it was decided to study R in Tuscaloosa only in informal speech. Therefore, the linguistic interviews were devised to elicit as natural responses as possible. At no point in the interviewwas any material offered for the interviewee to read. Since it was believed that such an intrusion into the natural, conversation-like quality of the interview would have caused certain restraints and would have reminded the person being interviewed of the artificiality of the situation, it was decided to sacrifice the comparison of language in a formal versus informal basis for the sake of natural, conversational language.

To insure that the pronunciations of R collected for this study all occurred

in an informal speech setting, the first 15 recorded occurrences of /r/ in the speech of each informant and 15 later occurrences of /r/ (at a point in the interview when the informant was considered especially relaxed) were transcribed. It was assumed that the first 15 occurrences of /r/ in the speech of an informant are likely to be the most formal since at the beginning of an interview, the informant is most aware of his responses and of the presence of a tape recorder. While in the "formal" situation, some of the informants exhibited pronunciations slightly nearer to the broadcast standard than those appearing later in the interview; however, a number of speakers in this early stage of the interview exhibited pronunciations less like the broadcast standard. It is concluded, therefore, that the speech sample considered in this present study basically consists of a single casual style

The major difficulty in conducting this survey was in finding people who both would qualify as lower class informants and agree to be interviewed while the tape recorder was running. In those instances in which I did not know the informant at least casually, a mutal friend was present to insure a relaxed atmosphere and as natural speech as possible from the informants. In most cases, however, I was acquainted with the informants before the interview was requested.

In the interviews for this study, no particular response was being sought. Questions concerning family history, family life, discipline, games, school, religion, dating, superstitions, fear, and hobbies and travel were asked to insure topics of conversation. These subjects have proven to work well in past interviewing experiences. However, informants were encouraged to talk freely on any subjects of their choice.

Most of the interviews were conducted in the summer of 1971, with a few conducted in the summer of 1972. Where possible, interviews were conducted with representatives of three generations within a family. Although it remains an

area of controversy, there is evidence to support the position that a child's language is influenced more by his friends and the neighborhood in which he lives than by his parents. Therefore, interviewing family groups should not weight the data in any direction but should help to avoid as many variables as possible among the social backgrounds of the respondents. An attempt was made to record at least one hour of casual speech with each informant. In some cases among the youngest informants in the lower class, shorter interviews were conducted. Getting the youngest, lower class informants to talk freely for long periods of time was extremely difficult.

Originally, informants were classified in this study into three categories. For purposes of this study, it was not deemed necessary either to devise new labels or to use someone's "different labels to talk about social division in Tuscaloosa; therefore, because they appeared the most natural and most well-known, the labels chosen for the divisions were upper class, middle class, and lower class. Since the middle class included informants from a wide range of income, occupation, and educational backgrounds, the middle class was later redivided into the upper middle class and working class. This subdivision makes possible finer distinctions in the analysis of R. Many of these distinctions are obscured by the large range of informants in the original middle class. Some sociologists feel that an even larger number of classes exist in the South. Warner Meeker, and Ellis in an article "What Social Class Is In America" state:

> Studies in the Deep South demonstrate that, in the older regions where social changes until recently have been less rapid and less disturbing to the status order, most of the towns above a few thousand populations have a six-class system in which an old-family elite is socially dominant.

Yet, since it is impossible to assign points other than subjectively for "social dominance," a scale which objectively assign points in three categories was devised. The three areas considered for social ranking are education, occupation

and income. In each of these areas, the highest number of points to be achieved is five.

The informants were ranked according to education as shown in Figure 1.

Figure 1.

Since it would be unfair, if not impossible to rank the members of the youngest age groups on an equal scale with the members of the other two groups if their own education were used to assign points, the children usually were assigned the same number of points as their parents. However, in a case when a young informant already had surpassed the educational level of his parents, he received points for his own education. In cases where the two parents had different educational backgrounds, the informants was assigned the number of points accorded to the parent with the most education.

Means for assigning points for occupation were somewhat more complex. A list of all the informants' occupations was compiled and ordered according to the North-Hall Scale of Occupational Prestige, commonly referred to as a NORC Scale, which is perhaps the best known and most frequently used of such occupational scales. This list of represented occupations was then divided into five groups as shown on Figure 2.

Figure 2.

This scale is in no way meant to be inclusive of all occupations and covers only those occupations represented in this sample. Wives were assigned their husbands' occupational ratings unless their own ratings were higher, and children were assigned their parents' ratings.

Points were assigned to the informants for income according to the scale shown in Figure 3.

These figures may appear to be rather high; higher, the median income per white family in Tuscaloosa was computed from the 1970 Census Bureau figures as approximately $11,067. Certainly, this figure is higher than the national median

family income. Therefore, since this ranking system was devised to be adequate and representative only for Tuscaloosa, cut-off points were somewhat higher than they might be for a national scale. Since these are family income figures, the totals include the incomes of both husband and wife where appropriate. Again, children were assigned their parents' ratings.

The points for each informant were totaled and the totals for all informants ranked in descending order. From these totals, social classes were delimited as shown in Figure 4. Since the bulk of the white population in the United States typically falls into the middle social group, the large middle class shown in this sample is probably representative of the total white population of Tuscaloosa. This large group covering informants receiving 7-12 points includes such diverse informants as those described in Figure 5.
This diversity of informants in the middle group suggested a further breakdown of this middle class into the division shown in figure 6.

Since the scales presented were designed to rank social classes in Tuscaloosa alone, a comparison of the rankings assigned from these scales to rankings on the well-known national scale drawn by Joseph Kahl in the American Class Structure would probably be similar to the comparison shown in Figure 7.

A division of the informants according to age is an important means of studying sound change in progress as well as, perhaps, providing a means of studying trends of sound change within a social group or among social groups. Rather than superimposing figures for age divisions given in previous sociolinguistic studies, the age divisions were made in what seemed a most natural pattern for this study. Since 22 is the age by which most people finish undergraduate school, it provides a good upper boundary for the youngest age group. No age limit was set on how young an informant could be, but all informants except one were eleven years old or older. The youngest informant was an extremely verbal eight-year old.

The second age group is the largest and includes people from 23 to 61 years of age. These limits were chosen because they generally represent the work years of an individual.

The lower limit for the third age group was set at 62, which is the age when a person normally either retires or begins to consider retirement. In this age group, the oldest informant was 86. However, all informants were screened carefully to insure that they could still hear properly.

Again, to help eliminate bias in my transcription of the pronunciations of R from the tapes, the services of another transcriber were acquired to listen to the tapes independently and record the sounds as he heard them. The pronunciations of R were noted phonetically. All words for which there was a disagreement between the transcribers in natation were excluded from this study. The total of such words was 7 per cent.

Excluded from this study at the outset were proper names, words for which the level of audibility was too low, words accompanied by laughter, or words consisting of false starts or including obvious performance errors. These cases are not part of the 7 per cent exclusions.

In Tuscaloosa, as elsewhere, /r/ ranks as one of the key phonological variables for sociolinguistic study. Even people with little linguistic sophistication are aware of the role /r/ plays in Southern speech, as evidenced by their dropping of /r/ in an imitation of Southern speech. As it shall be seen, this public conception of Southern speech as /r/-less speech is no longer completely justified, but the point to be made is that production of /r/ in Tuscaloosa is of extreme importance in considering stratification by class and age.

Previous sociolinguistic studies such as the one done by Crockett and Levine in a Piedmont Community in North Carolina, Labov in NYC, McDavid in a Piedmont Community in South Carolina, and Wolfram in Detroit, have dealt with /r/ within

a binary system. Given an informant's response containing a potential occurrence of /r/, a notation of + or - (or some other convention) was used to designate the presence or absence of /r/. Since the presence of /r/ is on a continuum, ranging from full /r/-constriction to no /r/-constriction, and since in Tuscaloosa there frequently appears an intermediate form, which might be termed partial /r/-constriction, a ternary system was adopted to analyze the variable. In the following discussion, X designates approximately full /r/-constriction, Q designates no apparent /r/-constriction or an /r/-like glide, and designates no apparent /r/-constriction.

Transcription necessarily is more difficult with a ternary system than with a binary system since, in the former, three values need to be recognized, while in the latter, only two values must be distinguished. This no doubt helps to explain the 7% of words that were excluded from this study because of a difference in transcription.

Certain environments are seen to increase or decrease the likelihood of /r/-constriction. These environments have been noted in many previous studies, but it is necessary to state them again since in this study /r/ in certain environments is not dealt with at all. Full /r/-constriction appears in virtually every instance in the following environments.

a. Words with initial /r/: rabbit, rope, rifle.
b. Words with /r/ in consonant clusters: bridge, great, prize.
c. Words with intervocalic /r/: bury, parole, marry.
d. Words with final /r/ followed by any words beginning with a vowel: more apples, year ago, scare easily.
e. Words with final /r/ followed by any words beginning with an /r/: poor rider, four rats, car racer.

The following three environments are considered separately since they are

likely to affect the production of /r/.

f. Words in which /r/ follows a stressed mid-central vowel: her, bird, work. In this environment full /r/-constriction is likely to occur.

g. Words in which /r/ follows the low-mid back vowel: door, porch, corn.

h. Words in which final /r/ occurs in an unaccented syllable: father, power, minister.

/r/-constriction has a tendency to decrease in these last two environments.

In addition to considering phonetic conditioning, an attempt was made to distinguish between words containing preconsonantal /r/ (beard, card) and final /r/ (beer, car). However, no significant pattern of difference in /r/-constriction between the types was noticeable in Tuscaloosa. Rather, the differences in /r/-constriction varied in an apparently free manner among social classes and age groups within social classes.

Figures 9 and 10 in which the environments designated in Figure 8 are excluded render a clear description of the stratification of /r/ in Tuscaloosa speech.

An attempt to show class stratification without taking into account age differentiation within social classes would fail to give the complete picture of the speech of the city. Figure 9, for example, shows only a slight difference in percentages of full /r/-constriction between the older and middle-age upper class speakers. However, the youngest speakers in the upper class, who have full /r/-constriction 85% of the time, exhibit a clear reversal of the norm for /r/-constriction. A study which ignores the intra-class age factor would state a general upper class figure of approximately 40% full /r/-constriction, totally concealing the important trend among younger speakers.

Among the oldest speakers, there is exhibited in the X (full /r/-constriction) column an ideal case of "gradient stratification; the percentage of full /r/-constriction increases gradually from low to high from upper to lower class.

In the middle age group, this "gradient" stratification no longer exists because the upper class is more completely separated from the middle and lower classes than was the case among the oldest speakers.

It is with the 22- group that the most interesting and significant developments occur. All of the classes in this group adopt full /r/-constriction as their norm, but stratification in the X column, nevertheless, is maintained. Since the 22-UC group has in one generation made the change to full /r/-constriction as its norm, and since the lower class among all age groups already has had full /r/-constriction as its norm, the implication is that, should the present trend continue, full /r/-constriction will be the norm for all white speakers in Tuscaloosa within two generations.

Figure 10 illustrates an age stratification for /r/ with an example of "sharp" stratification shown in the X column within the upper class. Note the pronounced increase in full /r/-constriction between the 23+ UC group and the 22-UC group. Among the upper class, the oldest and the middle age members are much alike in their percentage of full /r/-constriction. Further investigation of Figure 10 indicates that this similarity has a qualifier; in the check (no /r/-constriction) column "gradient" stratification appears. A look at the Q column also will show that the 23+ UC group has shown a greater move toward /r/-constriction than the 62+ UC group. This particular point serves to reemphasize the value of a ternary system in dealing with /r/ in Tuscaloosa speech. The large percentage of full /r/-constriction in the 22-UC group, when contrasted with the rather low figures for the other age groups in the upper class, provides an illuminating example of "Change in Progress. Change in Progress in this study means an obvious shift in pronunciation between two age groups within the same social class since this study deals in apparent time rather than real time.

Figure 10 shows that in the past /r/-less speech has been the "prestige speech" in Tuscaloosa; however, among speakers in the 22-UC group, not one case

of /r/-absence was recorded. What is being witnessed, then, is not so much a shift from one prestige form to another, (since all age groups in the lower class already have full /r/-constriction as their norm), but the obliteration of a social marker. Therefore, the production of /r/ alone in a child selected at random in Tuscaloosa generally would not be sufficient to mark his social class.

Stratification by age also is evidenced within the middle class in the X column, but the interesting figures appear in the check column. The oldest informants show no /r/-constriction 24% of the time. This figure drops to 5% for the middle-aged group and to 0% for the youngest age group. These figures again clearly evidence the dying of a prestige form.

A look at the three environments excluded in figures 9 and 10 and their effect on /r/-production will offer more insight into the reason for excluding them.

Figures 11 and 12 show percentages of full, partial and no /r/-constriction by class and by age in words containing /r/ following a stressed mid-central vowel. Figures 13 and 14 show percentages of the variant pronunciations of /r/ following the low-mid back vowel. Figures 15 and 16 show percentages of /r/-production in unaccented syllables.

Even though percentages of /r/-constriction vary in these three environments, the direction of stratification is consisted with that shown in Figures 9 and 10.

As indicated in Figures 11-16, the 22-LC group often deviates from the pattern of stratification shown by the other social classes and age groups. However, much of this deviation may be accounted for by considering the speech of two informants. Informant H.F. in the 22-LC group apparently has speech that for no obvious reason is atypical for most of her group. Informant F.G. was considered a member of the lower class by virtue of his parents' rank as lower class informants; however, P.G.'s social contacts almost exclusively are members of the middle class, and the indication, therefore, is that he will

(and already does) exhibit upward mobility with respect to social class and will move beyond the rank of his parents.

Figures 17 and 18 give the percentages of the variant pronunciations of /r/ for four social classes and three age groups. These figures exclude environments a-c the same as Figures 9 and 10 did. Perhaps this division into upper middle class and working class makes possible finer distinctions in the analysis of R. In the X column, clear cases of class stratification are exhibited within all age groups. The 62+UMC shows a mixed pronunciation for /r/ with a large percentage of partial /r/-constriction and balanced percentages of full /r/-constriction and no /r/-constriction. Within the 23+UMC group, the move to full /r/-constriction as a norm is observed. A similar development occurs for the upper class, but their adoption of full /r/-constriction as a norm takes place a generation later. It was seen that /r/-less speech had been the prestige speech (the speech of the UC) and it was not until recently (the 22-UC) that the upper class shifted its pronunciation to full /r/-constriction. The working can lower classes, on the other hand, have always had full /r/-constriction as a norm, but even within these classes, the percentages of /r/-constriction have increased.

As shown in Figure 18, full /r/-constriction is firmly established as the norm among the youngest speakers. Gradient stratification appears within the 22-age group by virtue of all social classes' exhibiting large percentages of full /r/-constriction. An age stratification with all classes is maintained under the new breakdown.

Another interesting facet of the study of /r/ is the phenomenon of intrusive /r/. In some words, /r/ appears following the final vowel; piano, hollow, and minnow. In all these words, the final vowel has been reduced to a schwa, and then /r/ has been added. Intrusive /r/ also appears at the end of certain proper nouns; for example Tuscaloosa, Hawaii, and Alabama. Finally, it occurs

most frequently in the word wash, which seems to be an isolated dialect form.

Intrusive /r/ appears in the speech of ten informants interviewed for this study; however, two of these ten informants have it only in wash. Not one occurrence of intrusive /r/ appeared in the speech of upper class informants. In fact, its restriction to the middle and lower classes marks it as a stigmatized language feature, which seems to be disappearing under the influence of extreme social pressure.

In summary, it is shown that a ternary system XQCheck) is both necessary and valuable in studying /r/ in Tuscaloosa. It also is shown that certain environments of /r/ affect the degree of /r/-constriction. The occurrence of /r/ initially, in consonant clusters, intervocalically, and preceding a word which begins with a vowel or another /r/ virtually always results in full /r/-constriction. Full /r/-constriction also is promoted, though to a less degree, following a stressed, mid-central vowel. However, the possibility of full /r/-constriction is lessened following a low-mid back vowel and in unaccented syllables.

Stratification of /r/ is exhibited in Tuscaloosa speech both by class and by age. It is further shown that if /r/ following a stressed mid-central vowel, /r/ following a low-mid back vowel, and /r/- in unaccented syllables are studied separately, each independently will show stratification by class and by age, with the exception of the low-mid back vowel in the 23+ age group. Intrusive /r/ in words like Alabama, minnow, and piano is avoided totally by the upper class but appears in the speech of members of the other classes, and therefore, should be considered in a study of /r/ in Tuscaloosa.

Even though all age groups of lower class informants in Tuscaloosa have more full /r/-constriction than any other social classes, all social classes are seen to be moving toward full /r/-constriction as their norm, as can be noted particularly by the large percentage of full /r/-constriction evidenced

by the 22- informants in all social classes.

Since the upper class is moving rapidly in apparent time toward the adoption of full /r/-constriction as its norm, it is likely that full /r/-constriction will be the prestige speech in Tuscaloosa in just two generations.

FIGURE 1

Educational Ranking

5 - college graduate

4 - some college

3 - high school graduate

2 - some high school

1 - grade school or less

FIGURE 2

Occupational Scale

5 - doctor, dean

4 - land developer, large businessman, college professor engineer

3 - public school teacher, small businessman, social worker saw mill owner, insurance salesman, motel manager, train engineer

2 - shift worker, clerical worker, hair dresser, government hospital employee

1 - small farmer, laborer

FIGURE 3

5 - $24,000 or more

4 - $18,000 - $24,999

3 - $10,000 - $17,999

2 - $4,000 - $9,999

1 - under $4,000

FIGURE 4

Social Classes in Tuscaloosa

13 - 15 points -- upper class

7 - 12 points -- middle class

under 7 points -- lower class

FIGURE 5

Selected Middle Class Informants

Informant A (female)

Occupation-school teacher (husband-engineer)	4
Education-college graduate	5
Income (±husband) ($16,000)	3
Total	12

Informant B (male)

Occupation-train engineer	3
Education-9th grade	2
Income-($7,500)	2
Total	7

FIGURE 6

Sub-division of Middle Class

10-12 points -- upper middle class

7 - 9 points -- working class

FIGURE 7

Comparison of Social Class in this study to Social Class as defined by Joseph Kahl

Kahl	This study
upper class	this group probably not present to any measurable degree in Tuscaloosa
upper middle class	upper class
lower middle class	upper middle class
working class	working class
lower class	lower class

FIGURE 8

Environments which are likely to affect the constriction of /r/

a. Words in which /r/ follows a stressed mid-central vowel: her, bird, work

b. Words in which /r/ follows the low-mid back vowel: door, porch, corn

c. Words in which final /r/ occurs in an unaccented syllable: father, power minister

FIGURE 9

% of /r/ by class, excluding environments a-c

SEC	X	O	V
62 + UC	10	35	55
62 + MC	41	35	24
62 + LC	85	15	0
23 + UC	14	59	27
23 + MC	72	23	5
23 + LC	90	10	0
22 - UC	85	15	0
22 - MC	88	12	0
22 - LC	94	3	3

FIGURE 10

% of /r/ by age, excluding environments a-c

SEC	X	O	V
62 + UC	10	35	55
23 + UC	14	59	27
22 + UC	85	15	0
62 + MC	41	35	24
23 + MC	72	23	5
22 - MC	88	12	0
62 + LC	74	20	6
23 + LC	90	10	0
22 - LC	94	3	3

FIGURE 11

% of /r/ by class following a stressed mid-central vowel

SEC	X	O	V
62 + UC	4	53	43
62 + MC	49	32	19
62 + LC	82	17	1
23 + UC	33	41	26
23 + MC	88	6	6
23 + LC	92	8	0
22 - UC	87	10	3
22 - MC	89	11	0
22 - LC	89	11	0

FIGURE 12

% of /r/ by age following a stressed mid-central vowel

SEC	X	O	V
62 + UC	4	53	43
23 + UC	33	14	26
22 - UC	87	10	3
62 + MC	49	32	19
23 + MC	88	6	6
22 - MC	89	11	0
62 + LC	82	17	1
23 + LC	92	8	0
22 - LC	89	11	0

FIGURE 13

% of /r/ by class following the low-mid back vowel

SEC	X	O	V
62+UC	10	45	45
62+MC	22	39	39
62+LC	49	39	19
23+UC	0	67	33
23+MC	40	49	11
23+LC	55	36	9
22-UC	65	35	0
22-MC	76	20	4
22-LC	68	22	0

FIGURE 14

% of /r/ by age following the low-mid back vowel

SEC	X	O	V
62+UC	10	45	45
23+UC	0	67	33
22-UC	65	35	0
62+MC	22	39	39
23+MC	40	49	11
22-MC	76	20	4
62+LC	42	39	19
23+LC	55	36	9
22-LC	68	22	0

FIGURE 15

% of /r/ by class when it appears in an unaccented syllable

SEC	X	O	V
62+UC	0	27	73
62+MC	15	24	61
62+LC	36	48	16
23+UC	6	25	69
23+MC	37	30	33
23+LC	40	35	25
22-UC	65	30	5
22-MC	78	18	4
22-LC	79	13	8

FIGURE 16

% of /r/ by age when it appears in an unaccented syllable

SEC	X	O	V
62+UC	0	27	73
23+UC	6	25	69
22-UC	65	30	5
62+MC	15	24	61
23+MC	37	30	33
22-MC	78	18	4
62+LC	36	48	16
23+LC	40	35	25
22-LC	79	13	8

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FIGURE 17

% of /r/ by class

SEC	X	O	V
62 + UC	10	35	55
62 + UMC	22	57	21
62 + WC	50	30	20
62 + LC	74	20	6
23 + UC	14	59	27
23 + UMC	69	25	6
23 + WC	79	21	0
23 + LC	90	10	0
22 - UC	85	15	0
22 - UMC	88	12	0
22 - WC	89	11	0
22 - LC	94	3	3

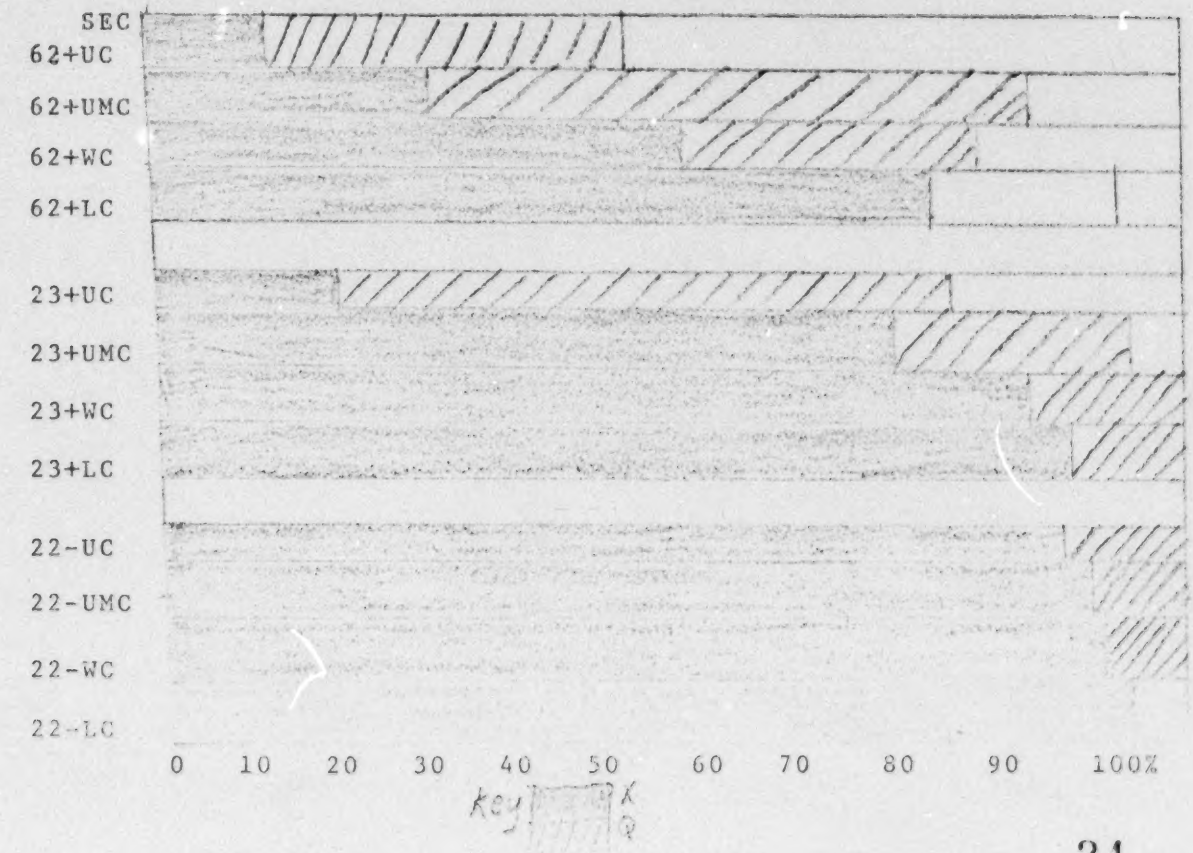

FIGURE 18

% of /r/ by age

BEST COPY AVAILABLE

SEC	X	O	V
62 + UC	10	35	55
23 + UC	14	59	27
23 - UC	85	15	0
62 + UMC	22	57	21
23 + UMC	69	25	6
23 - UMC	88	12	0
62 + WC	50	30	20
23 + UC	79	21	0
22 - WC	89	11	0
62 + LC	74	20	6
23 + LC	90	10	0
22 + LC	94	3	3